# Louisiana Department of Environmental Quality (LDEQ)
# Office of Environmental Services

# STATEMENT OF BASIS

**DOCKS – Loading Unit**
**Baton Rouge Refinery**
**ExxonMobil Refinery and Supply Company**
**Baton Rouge, East Baton Rouge Parish, Louisiana**
**Agency Interest Number: 2638**
**Activity Number: PER20090003**
**Draft Permit No. 2047-V2**

## I. APPLICANT:

**Company:**
ExxonMobil Refinery and Supply Company (BRRF)
P.O. Box 551, Baton Rouge, LA 70821-0551

**Facility:**
Baton Rouge Refinery
4045 Scenic Hwy, Baton Rouge, East Baton Rouge Parish, Louisiana
Approximate NAD83 coordinates: 30°29'30"23 hundredth latitude, and 91°10'8"31 hundredth longitude.

## II. FACILITY AND CURRENT PERMIT STATUS:

ExxonMobil Refinery and Supply Company owns and operates the Baton Rouge Refinery, a petroleum refinery located in Baton Rouge, Louisiana.

ExxonMobil's Baton Rouge Refinery Docks are used to load and unload a variety of products such as crude oil, middle distillates, motor gasoline, jet fuel, lubes and heavy residual/fuel oils. In addition to refinery streams, the dock facility can also transfer feedstocks and products to/from ExxonMobil Chemical Plant located north of the Refinery. The plant is covered by Standard Industrial Classification (SIC) 2911.

The Docks are an existing facility at BRRF, operating under Part 70 Permit 2047-V1.

Several Part 70 permits addressing portions of the facility have already been issued. These include:

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| Permit Number | Units or Sources | Unit Name | Date Issued |
|---|---|---|---|
| 2047 (State) | | Docks | 3/11/1991 |
| 2047-V0 | | Docks | 9/15/2004 |
| 2047-V1 | | Docks | 4/11/2006 |
| 2755-V3 | | Pipestill Complex | 10/8/2008 |
| 2385-V5 | | Catalytic Cracking complex | 1/8/2009 |
| 2447-V2 | | Hydroprocessing Complex | 9/23/2008 |
| 2261-V2 | | Reforming | 8/18/2008 |
| 2176-V3 | | Low Sulfur Mogas Complex | 4/11/2006 |
| 2589-V4 | | Light Ends Complex | 9/4/2008 |
| 2234-V4 | | Coker Complex | 12/9/2008 |
| 2341-V1 | | Specialties Complex | 10/11/2007 |
| 2296-V3 | | Light Oils Finishing | 7/30/2008 |
| 2300-V0 | | Sulfur Recovery Complex | 3/20/2006 |
| 2363-V2 | | Utilities | 11/5/2008 |
| 2795-V3 | | Refinery Tank Farm | 11/29/2007 |
| 0840-00127-V3 | | Baton Rouge Terminal | 5/13/2008 |
| 2926-V0 | | Complex Lab | 8/31/2005 |
| 3060-V0 | | Hydrofining Unit | 1/18/2008 |

## III. PROPOSED PERMIT / PROJECT INFORMATION:

**Permit Application Submittal Information**

ExxonMobil Refinery and Supply Company submitted an application dated March 6, 2009, requesting to renew Permit No. 2047-V1.

**Project description**

BRRF proposes the following changes:

- Minor changes and reconciliations.
- Renew the Part 70 Operating Permit.
- No physical modification or operational changes are being proposed.

**Permitted Air Emissions**

Estimated emissions in tons per year are as follows:

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| Pollutant | Before | After | Change |
|---|---|---|---|
| $PM_{10}$ | 1.54 | 1.54 | - |
| $SO_2$ | 0.12 | 0.12 | - |
| $NO_X$ | 28.67 | 28.67 | - |
| CO | 14.07 | 14.07 | - |
| VOC* | 231.56 | 231.63 | +0.07 |

**Prevention of Significant Deterioration Applicability**

There is no physical modification or operational changes to be proposed; therefore, there is no pollutant increased to the significant level to trigger Prevention of Significant Deterioration (PSD) review.

This application was reviewed for compliance with the Part 70 operating permit program. It was also reviewed for compliance with Louisiana Air Quality Regulations, National Emission Standards for Hazardous Air Pollutants (NESHAP), and New Source Performance Standards (NSPS). Prevention of Significant Deterioration (PSD) does not apply.

**MACT requirements**

Compliance with the Louisiana Fugitive Emission Consolidation Program, with LA Refinery MACT being the most stringent program for the Docks – Loading Unit, is determined as MACT for fugitive emissions.

**Air Modeling Analysis**

Dispersion Model(s) Used: None

| Pollutant | Time Period | Calculated Maximum Ground Level Concentration | Louisiana Air Quality Standard (NAAQS) |
|---|---|---|---|

Emissions were reviewed by the Air Quality Assessment Division to ensure compliance with the National Ambient Air Quality Standards (NAAQS) and Louisiana Ambient Air Standards (AAS). The proposed project did not require the applicant to model emissions.

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**General Condition XVII Activities**

The facility will comply with the applicable requirements of General Condition XVII of the Louisiana Air Emission Permit General Conditions in the Title V Permit. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit. These releases are small and will have an insignificant impact on air quality.

**Insignificant Activities**

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

## IV. Permit Shields

A permit shield was not requested.

## V. Periodic Monitoring

Fugitive emissions must be monitored according to the provisions of Louisiana Refinery MACT. For DOCKS/MVR – Load Flare Emission a continuous monitoring system for presence of flame is required.

## VI. Applicability and Exemptions of Selected Subject Items

Regulatory applicability, standards, monitoring, reporting and recordkeeping requirements are provided in the Facility Specific Requirements Section of the draft permit. The table below summarizes highlights of the regulatory applicability for each emission point.

| ID No: | Requirement | Notes |
|---|---|---|
| Facility Wide | LAC 33:III.2141 – Refinery Process Unit Turnarounds | DOES NOT APPLY. The dock area is not a process unit. |
| | 40 CFR 61 Subpart FF – Benzene Waste Operations | APPLIES. The provisions of this subpart apply to petroleum refineries. |
| | 40 CFR 63 Subpart GGGGG – National Emission Standards for Hazardous Air Pollutants: Site Remediation | APPLIES. The provisions of this subpart apply to the containers used as Remediation Materials Management Units. |
| | 40 CFR 61 Subpart M – National Emission Standard for asbestos | APPLIES. The facility handles asbestos containing materials. |
| | LAC 33:III.2153.A – Limiting VOC Emissions from Industrial Wastewater | DOES NOT APPLY. This regulation does not apply to Petroleum Refineries. |

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|---|---|---|
| Facility Wide (continued) | NESHAP for Source Category Subpart B – Requirements for Control Technology Determination for Major Sources in Accordance with Clean Air Act Sections, Sections 112(g) and 112(j) [40 CFR 63.40 & 63.43(a)] | DOES NOT APPLY. The requirements of this subpart that implement Section 112(g) of the CAA, applies to the construction or reconstruction of a new process or production unit which emit or have the potential to emit >=10 TPY of any HAP or >=25 TPY of any combination of HAPs. No such construction or reconstruction is included in this permit. |
| DOCKS/LOADING Docks Non-MVR Loading Emissions | LAC 33:III.2108.A – Marine Vapor Recovery | EXEMPT. Emissions from VOCs with a true vapor pressure of less than 1.5 psia at the loading temperature of the liquid are exempt from the control requirements of this Section. |
| | 40 CFR 61 Subpart BB – Benzene Transfer Operations | EXEMPT FROM CONTROL. Loading racks which load gasoline, crude oil, natural gas liquids, petroleum distillates, and/or do not load products >= 70% benzene are exempt from the control requirements of this subpart. |
| | 40 CFR 63 Subpart Y - Marine Tank Vessel Tank Loading Operations | EXEMPT from MACT and RACT Standards. Loading operations of commodities with a TVP < 1.5 psia are exempt from the MACT and RACT standards. |
| | 40 CFR 63 Subpart CC – Petroleum Refineries, Marine Tank Vessel Tank Loading Operations | EXEMPT. Marine vessel loading operations are subject to the provisions of Subpart CC only to extent they are subject to the provisions of Part 63 Subpart Y. |
| DOCKS/MVR LOAD Flare Emissions | LAC 33:III.1503.C - Emission Standard for Sulfur Dioxide | EXEMPT. The unit emits <100 tpy of $SO_2$. |
| | 33:III.2201.C.7 - Control of Emission of Nitrogen Oxides – Affected Facilities in the Baton Rouge Nonattainment Area and the Region of Influence LAC | EXEMPT. Flares are exempted from the provisions of Chapter 22. |
| | 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries | APPLIES. The facility includes fuel gas combustion device (flare). |
| | 40 CFR 61 Subpart BB – Benzene Transfer Operations | APPLIES. This facility includes marine loading operations. |
| | 40 CFR 63 Subpart CC – Petroleum Refineries, Marine Tank Vessel Tank Loading Operations | APPLIES. NESHAP Part 63 Y serves as NESHAP Part 63 Subpart CC control for marine tank vessel loading operation. |
| | 40 CFR 63 Subpart Y - Marine Vessel Tank Loading Operations | APPLIES. This facility includes marine vessel loading operations. Subject to RACT standards. |
| | LAC 33:III.5105.B.3.a - Comprehensive Toxic Air Pollutant Emission Control Program STATE ONLY | EXEMPT. Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the requirements of Chapter 51 Subchapter A. |
| DOCKS/TK SUMP Docks Sump Tank | 40 CFR 63 Subpart CC – Petroleum Refineries, Marine Tank Vessel Tank Loading Operations | APPLIES. NESHAP Part 63 FF serves as NESHAP Part 63 Subpart CC control for marine tank vessel loading operation. |

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| | 40 CFR 61 Subpart FF – Benzene Waste Operations | APPLIES. The facility includes wastewater storage vessel. |
| | 40 CFR 64 Subpart A - Compliance Assurance Monitoring for Major Stationary Sources | EXEMPT – CAM requirements do not apply if source is subject to NSPS, NESHAP or MACT standards proposed after November 15, 1990. |
| | 40 CFR 60 Subpart A – General Provisions | DOES NOT APPLY. Source is not subject to the provisions of any standard of this part. |
| | 40 CFR 60 Subpart K – Standards of Performance for Storage Vessels for Petroleum Liquids | DOES NOT APPLY. The provisions of this subpart apply only to storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after June 11, 1973, and prior to May 19, 1978. Storage vessels with a capacity of less than 40,000 gallons are not subject to this subpart. |
| | 40 CFR 60 Subpart Ka – Standards of Performance for Storage Vessels for Petroleum Liquids | DOES NOT APPLY. The provisions of this subpart apply only to storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after May 18, 1978, and prior to July 23, 1984. Storage vessels with a capacity of less than 40,000 gallons are not subject to this subpart. |
| | 40 CFR 60 Subpart Kb – Standards of Performance for Storage Vessels for Petroleum Liquids | DOES NOT APPLY. The provisions of this subpart apply only to volatile organic liquid storage vessels for which construction, reconstruction, or modification commenced after July 23, 1984. |
| | 40 CFR 61 Subpart Y – Benzene Emissions form Benzene Storage Vessels | DOES NOT APPLY. The provisions of this subpart apply only to storage vessels storing benzene. |
| DOCKS/TK0001<br>DOCKS/TK0001 (continued)<br>Boat Gasoline Storage Tank | LAC 33:III.2103 - Storage of Volatile Organic Compounds | DOES NOT APPLY. This storage tank is less than 250 gallons. |
| | 40 CFR 60 Subpart K – Standards of Performance for Storage Vessels for Petroleum Liquids | DOES NOT APPLY. The provisions of this subpart apply only to storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after June 11, 1973, and prior to May 19, 1978. Storage vessels with a capacity of less than 40,000 gallons are not subject to this subpart. |
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| | 40 CFR 60 Subpart Y – Benzene Emissions form Benzene Storage Vessels | DOES NOT APPLY. The provisions of this subpart apply only to storage vessels storing benzene. |

## VII. Streamlined Requirements

| Unit | Program Being Streamlined | Stream Applicability | Overall Most Stringent Program |
|---|---|---|---|
| DOCKS/FUG | LA Refinery MACT | 5% VOTAP | LA Refinery MACT in the manner* agreed to be ExxonMobil in its approved Air Toxic Compliance Plan approved April 18, 1996, per Source Notice and Agreement dated October 14, 1996 |
| | LAC 33:III.2122 | 10% VOC | |
| | 40 CFR 63 Subpart CC - modified HON option | 5% VOHAP | |
| | 40 CFR 61 Subpart V (as referenced by 40 CFR 61 Subpart J) | 10% VOHAP (Benzene) | |

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## VIII. Glossary

**Best Available Control Technologies (BACT)** - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

**CAM** - Compliance Assurance Monitoring rule – A federal air regulation under 40 CFR Part 64

**Carbon Black** - A black colloidal substance consisting wholly or principally of amorphous carbon and used to make pigments and ink.

**Carbon Monoxide (CO)** – (Carbon monoxide) a colorless, odorless gas produced by incomplete combustion of any carbonaceous (gasoline, natural gas, coal, oil, etc.) material.

**Cooling Tower** – A cooling system used in industry to cool hot water (by partial evaporation) before reusing it as a coolant.

**Continuous Emission Monitoring System (CEMS)** – The total combined equipment and systems required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent.

**Cyclone** – A control device that uses centrifugal force to separate particulate matter from the carrier gas stream.

**Duct Burner** – A device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

**Federally Enforceable Specific Condition** - A federally enforceable specific condition written to limit the potential to Emit (PTE) of a source that is permanent, quantifiable, and practically enforceable. In order to meet these requirements, the draft permit containing the federally enforceable specific condition must be placed on public notice and include the following conditions:

- A clear statement of the operational limitation or condition which limits the source's potential to emit;
- Recordkeeping requirements related to the operational limitation or condition;
- A requirement that these records be made available for inspection by LDEQ personnel;
- A requirement to report for the previous calendar year.

**Grandfathered Status**- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

**Heat Recovery Steam Generator (HRSG)** – A steam generator that recovers exhaust heat from a gas turbine, and provides economizing and steam generation surfaces.

**Hydrogen Sulfide ($H_2S$)** - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

**Maximum Achievable Control Technology (MACT)** - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

**NESHAP** - National Emission Standards for Hazardous Air Pollutants –Air emission standards for specific types of facilities, as outlined in 40 CFR Parts 61 through 63

**Nitrogen Oxides ($NO_x$)** - Compounds whose molecules consists of nitrogen and oxygen.

**Nonattainment New Source Review (NNSR)** - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

**NSPS** - New Source Performance Standards – Air emission standards for specific types of facilities, as outlined in 40 CFR Part 60

**Organic Compound** - Any compound of carbon and another element. Examples: Methane ($CH_4$), Ethane ($C_2H_6$), Carbon Disulfide ($CS_2$)

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**Part 70 Operating Permit**- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

**$PM_{10}$**- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

**Potential to Emit (PTE)** - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

**Prevention of Significant Deterioration (PSD)** – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

**Selective Catlaytic Reduction (SCR)** – A noncombustion control technology that destroys $NO_X$ by injecting a reducing agent (e.g., ammonia) into the flue gas that, in the presence of a catalyst (e.g., vanadium, titanium, or zeolite), converts $NO_X$ into molecular nitrogen and water.

**Sulfur Dioxide ($SO_2$)** – An oxide of sulfur.

**TAP** - Toxic Air Pollutant (LDEQ acronym for air pollutants regulated under LAC 33 Part III, Chapter 51, Tables 1 through 3).

**Title V permit** – See Part 70 Operating Permit.

**"Top Down" approach** – An approach which requires use of the most stringent control technology found to be technically feasible and appropriate based on environmental, energy, economic, and cost impacts.

**Turbine** – A rotary engine in which the kinetic energy of a moving fluid is converted into mechanical energy by causing a bladed rotor to rotate.

**Volatile Organic Compound (VOC)** - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.